Honeywell

OneWireless Gauge Reader

Application Gateway User's Manual

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Revision 2
July 2009

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About This Document

This document describes Safety, Data collection, Web and OPC Interface for the OneWireless Gauge Reader Application Gateway (WGRAG). There is also a Trouble shooting section and Technical Specifications.

Honeywell does not recommend using devices for critical control where there is a single point of failure or where single points of failure result in unsafe conditions. The OneWireless Gauge Reader is targeted at open loop control, supervisory control, and controls that do not have environmental or safety consequences. As with any process control solution, the end-user must weigh the risks and benefits to determine if the products used are the right match for the application based on security, safety, and performance. Additionally, it is up to the end-user to ensure that the control strategy sheds to a safe operating condition if any crucial segment of the control solution fails.

Reference Information

Document Name	Document ID	Revision Number	Publication Date
OneWireless Gauge Reader Application Gateway Manual	34-XY-25-33	1	April 09
		2	July 09

References

The following list identifies all documents that may be sources of reference for material discussed in this publication.

Document Name	Document Part Number
OneWireless Gauge Reader Specification	34-XY-03-37
OneWireless Gauge Reader Installation Manual	34-XY-25-32
OneWireless Gauge Reader User Manual	34-XY-25-31
OneWireless Gauge Reader Model Selection Guide	34-XY-16-80

World Wide Web

Honeywell Solution Support Online:
http://www.honeywell.com/ps

Elsewhere

Call your nearest Honeywell office.

Training Classes

Honeywell Automation College:
http://www.automationcollege.com

Symbol Definitions

The following table lists those symbols used in this document to denote certain conditions.

Symbol	Definition
	ATTENTION: Identifies information that requires special consideration.
	TIP: Identifies advice or hints for the user, often in terms of performing a task.
CAUTION	Indicates a situation which, if not avoided, may result in equipment or work (data) on the system being damaged or lost, or may result in the inability to properly operate the process.
	CAUTION: Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. **CAUTION** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING: Indicates a potentially hazardous situation, which, if not avoided, could result in serious injury or death. **WARNING** symbol on the equipment refers the user to the product manual for additional information. The symbol appears next to required information in the manual.
	WARNING, Risk of electrical shock: Potential shock hazard where HAZARDOUS LIVE voltages greater than 30 Vrms, 42.4 Vpeak, or 60 VDC may be accessible.
	ESD HAZARD: Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices.
	Protective Earth (PE) terminal: Provided for connection of the protective earth (green or green/yellow) supply system conductor.
	Functional earth terminal: Used for non-safety purposes such as noise immunity improvement. NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national local electrical code requirements.
	Earth Ground: **Functional earth connection.** NOTE: This connection shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.
	Chassis Ground: Identifies a connection to the chassis or frame of the equipment shall be bonded to Protective Earth at the source of supply in accordance with national and local electrical code requirements.

continued

Symbol	Description
CE	For radio equipment used in the European Union in accordance with the R&TTE Directive the CE Mark and the notified body (NB) identification number is used when the NB is involved in the conformity assessment procedure. The alert sign must be used when a restriction on use (output power limit by a country at certain frequencies) applies to the equipment and must follow the CE marking.

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1) Introduction

Thank you for purchasing the Honeywell OneWireless Gauge Reader System. A core component of this system is our OneWireless Gauge Reader WGR Application Gateway (WGRAG). Please read this guide thoroughly before using the gateway.

2) Safety Precautions

- Do not expose the WGR Application Gateway to water.

Do not try to repair yourself as it contains no user-serviceable parts. Contact a qualified service technician for repairs. See the *Support* section below for details.

Make sure the gateway is installed in a temperature-controlled environment.

3) Overview of the WGR Application Gateway

The Honeywell WGR Application Gateway (WGRAG), is a flexible industrial gateway that collects Honeywell OneWireless Gauge Reader data points and enables access to the readings from a variety of user interfaces. The WGR Application Gateway can be used as part of an overall existing systems infrastructure such as distributed control, supervisory control or asset management system or as a stand alone station.

Figure 1 : WGR Application Gateway (WGRAG)

Through the industry standard OPC Data Access protocol, the data can be connected to your existing plant systems. The data can also be viewed from any computer on the intranet using a standard web browser.

Components

The WGR Application Gateway comes with the following components:

WGR Application Gateway **Power Cord**

Figure 2 : WGR Application Gateway components

Planning for Installation

1) Application Gateway location selection
   a) The WGR Application Gateway will need to be located in a climate controlled room, preferably where other servers are housed.
   b) The Application Gateway can be mounted on the wall with an optional wall mounting bracket shown in Figure 3, or it can be placed on a sturdy horizontal surface.
2) The Application Gateway will need access to a power outlet and an Ethernet connection.
3) The WGR Application Gateway requires a static IP Address assignment from the IT department, so that the Application Gateway can be easily accessed by both the WGRs and by any clients retrieving data from the Application Gateway.
4) The unit has two Ethernet ports.
   a) The top port is configured as a Static IP port, with a default IP address of 192.168.254.1, and is intended to be connected to the customer LAN.
   b) The bottom port is configured for DHCP, and is only intended to be used for connecting a laptop during installation or for diagnostics.
5) The WGRAG can optionally be connected to an uninterruptable power source (UPS) in order to ensure that there is no loss or corruption of data in the event of a facilities power outage.
6) An optional WGR wall mounting bracket can be ordered for more convenient installation.

Figure 3 : WGR Application Gateway Wall Mount Bracket

4) Web Interface

The Honeywell WGR Web Application is a browser-based program that enables you to remotely monitor, configure, and review data from Honeywell OneWireless Gauge Readers. This section explains how to read and edit data points, set up alerts, graph and export data, and troubleshoot common problems.

Accessing the Web Application and General Navigation

To access the Honeywell Web Application, open a web browser on any computer connected to the same local area network (LAN) as the WGR Application Gateway. Type in the static IP address or host name of the WGRAG in the web browser address field, and click Enter.

Refer to Figure 4 for an example.

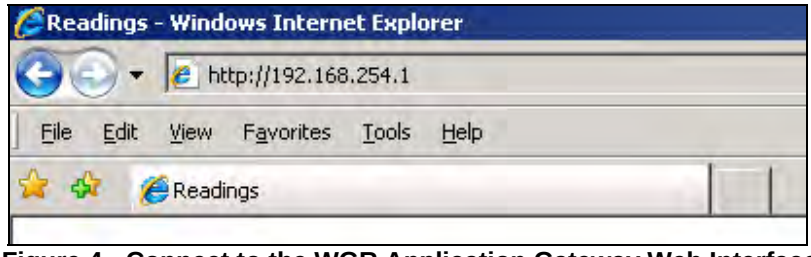


Figure 4 : Connect to the WGR Application Gateway Web Interface

Once connected, the application opens to the **READINGS** page (by default), where you can find the latest data and status information on every node in the system.

At the top of the **READINGS** page and every page in the application is a Main Menu bar with tabs that enable you to navigate through the different pages in the program. (See Figure 5.)

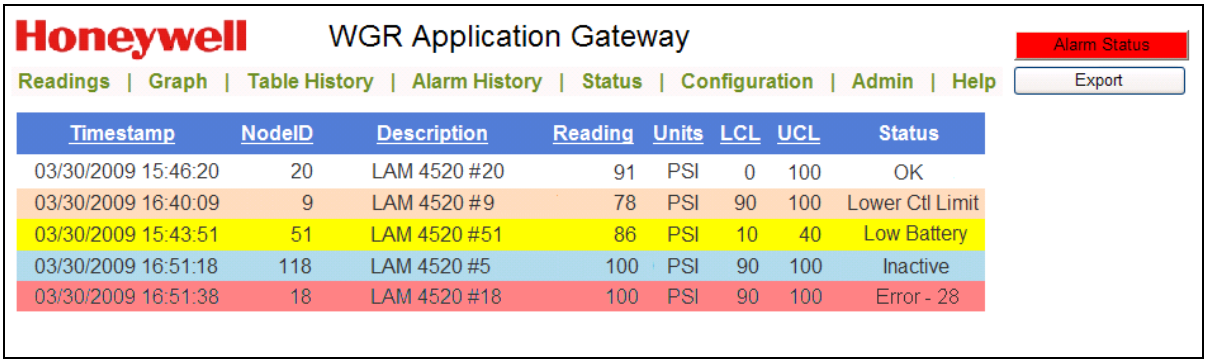
Honeywell
WGR Application Gateway
Alarm Status
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Export

Figure 5 : Main Menu bar used to navigate between pages

Also on the top of the **READINGS** page is the **Alarm Status** button. The button turns red when a node reading has passed above or below a preset control limit threshold, or when a low battery alarm is detected. By clicking on the Alarm Status button, you can view the alarm history and also reset the alarms. This is described in detail later in the document.

Checking Node Readings

The **READINGS** page enables you to check the summary of node readings. It also provides other detailed information, such as the time of the reading, as well as the upper and lower control limits and the status of a particular node.


Honeywell
WGR Application Gateway
Alarm Status
Export
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help

Timestamp	NodeID	Description	Reading	Units	LCL	UCL	Status
03/30/2009 15:46:20	20	LAM 4520 #20	91	PSI	0	100	OK
03/30/2009 16:40:09	9	LAM 4520 #9	78	PSI	90	100	Lower Ctl Limit
03/30/2009 15:43:51	51	LAM 4520 #51	86	PSI	10	40	Low Battery
03/30/2009 16:51:18	118	LAM 4520 #5	100	PSI	90	100	Inactive
03/30/2009 16:51:38	18	LAM 4520 #18	100	PSI	90	100	Error - 28

Figure 6 : Readings page shows summary of all nodes

Get Node Readings

To check the node readings, click on **READINGS** in the Main Menu bar. The **READINGS** page appears (see Figure 6) with the following information:

- **Timestamp:** Time when the last reading was taken.
- **NodeID:** Identification number that your Honeywell Field Representative originally assigns to a node for convenient reference.
- **Description:** A brief description of the node, for example, “Emergency Generator” or “Water Inlet Pressure.”
- **Reading:** Most recent reading taken from the node.
  - Your Field Service Representative configures the update rate of each node when the system is installed.
- **Units:** Unit of measurement that applies to the reading.
- **LCL**: Lower control limit.
  - When a node reading falls below this value, the systems signals an alert. (See “Setting Up the Alarm.”)
- **UCL**: Upper control limit.
  - When a node reading rises above this value, the system signals an alert. (See “Setting Up the Alarm.”)
- **Status:** Indicates the general operating status of the node.
  - Values are: OK, Inactive, Error, Lower Ctl Limit, Upper Ctl Limit, Low Battery

Based on the status, individual rows are also highlighted to provide an extra visual cue. See Table 1 for a detailed description of each status and the highlighted color.

Table 1 : Status Column Details

Status	Highlight Color	Description
OK	-	The reading was received without error and is within limits.
Error	Red	The WGR reported an error code. Consult with your installer to rectify any persistent error conditions.
Upper Ctr Limit (UCL)	Orange	If the reading exceeds the configured upper control limit. (Note: Each node has a separate control limit.)
Lower Ctr. Limit (LCL)	Orange	If the reading drops below the configured lower control limit. (Note: Each node has a separate control limit.)
Inactive	Light Blue	The node has stopped reporting data to the gateway for a period of time (4 * sample interval).
Low Battery	Yellow	The battery level has fallen below the low battery notification trip point.

Tip: Similar to standard Web pages, the Honeywell Web Application pages are static (they don't update automatically). To get updated values for any new readings, you must reload the page by pressing F5 on your keyboard or clicking the Refresh button on your web browser.

Sort Readings

You can temporarily sort a column of readings by ascending or descending value by simply clicking on any column heading that is underlined. The system does not save the sorting option selected, however, and reverts back to the default view when the page reloads.

Configuring Nodes

You can add (commission), delete, and edit node configurations by going to the **CONFIGURATION** page. This page is password restricted, so that only the system administrator or authorized installer can access it.

Access Node Configurations
To access the WGR Node Configuration screen:

1) **Click CONFIGURATION in the Main Menu.**

   a) A dialog box (Figure 7) appears asking for a user name and password.

Figure 7 : Administrator login page

2) **In the dialog box, enter a user name and password, and click Log In.**

   a) The **CONFIGURATION** page (Figure 8) appears. It has two clearly defined sections. A top section, where you can add and delete individual or multiple nodes. The bottom section displays all the nodes in the system that are visible to the gateway.

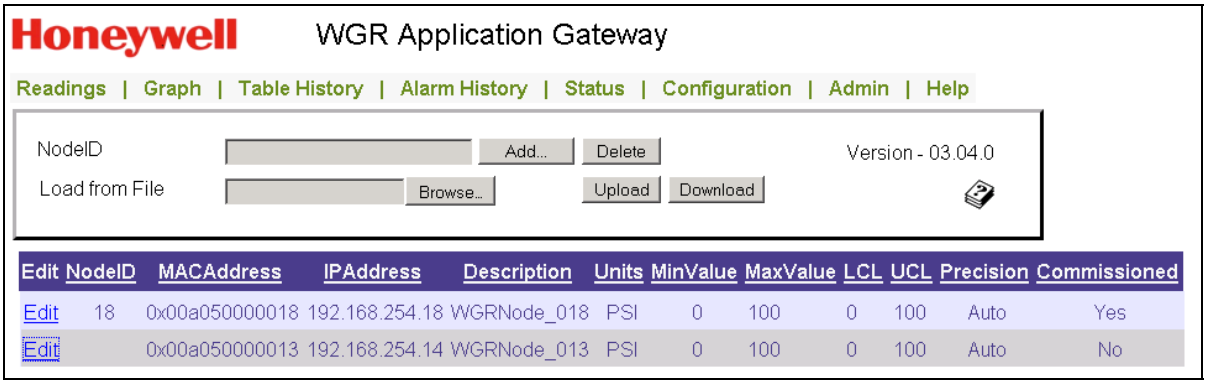

Honeywell
WGR Application Gateway
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
NodeID
Add...
Delete
Version - 03.04.0
Load from File
Browse...
Upload
Download
Edit NodeID MACAddress IPAddress Description Units MinValue MaxValue LCL UCL Precision Commissioned
Edit 18 0x00a050000018 192.168.254.18 WGRNode_018 PSI 0 100 0 100 Auto Yes
Edit 0x00a050000013 192.168.254.14 WGRNode_013 PSI 0 100 0 100 Auto No

Figure 8 : Main Configuration page to add, edit, or delete nodes

Delete a Node
To delete a node, enter the NodeID and click on the Delete button. Please note this action will delete the node and all of its associated historical data permanently.

Add (Commission) a Node
There are three options for adding (commissioning) a new node to the gateway:

Option 1)

Nodes are configured by the Configuration Tool, and they begin attempting to contact the gateway when configuration is complete. These nodes are auto-detected and added to the Node list by the gateway as uncommissioned nodes. All uncommissioned nodes will have a temporary NodeID automatically assigned by the WGRAG with a value of 2000 or above.

The user can commission the node by assigning a permanent NodeID between 1-1000. Click on the Edit link for the corresponding node in the table, which opens the dialog shown in Figure 11. Enter a new permanent NodeID value in the "Commission as new NodeID" box, and then click the Commission button. The Node is now officially added to the gateway and is fully commissioned. Please note, upon commissioning of the node, the temporary uncommissioned node and its temporary historical data is deleted.

Option 2)
Individual nodes can be manually added to the system prior to having them communicate to the gateway for the first time. Note that this requires manual entry of several additional pieces of data, which would otherwise be automatically entered in Option 1. The dialog box in the top section of the CONFIGURATION page enables adding or deleting nodes. (See Figure 9.)

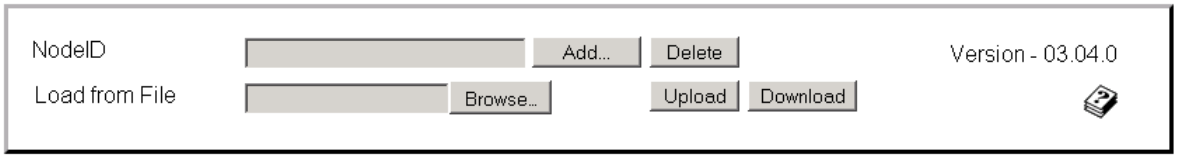


Figure 9 : Configuration page dialog box

To add a node, enter the new NodeID (between 1-1000) and press the Add button. This will bring up a pop-up dialog box (See Figure 11). This dialog box will allow you to enter details about the node, so that when it does communicate to the gateway for the first time, it will automatically be fully commissioned without further intervention. Please refer to the details in the section "Edit a Node" below for additional information about each parameter field.

Option 3)

Multiple nodes can be manually added to the gateway efficiently using a text file method. Simply enter the properly formatted node information to the Nodeconfiguration.txt file on the gateway. This file is a tab-separated text file that lists all of the configuration parameters. An example file is shown in Figure 10. First click the Download button on the CONFIGURATION page in order to create the Nodeconfiguration.txt file on your PC. Then make your desired edits, and use the Upload button to load the new nodes and parameters from the edited configuration file.

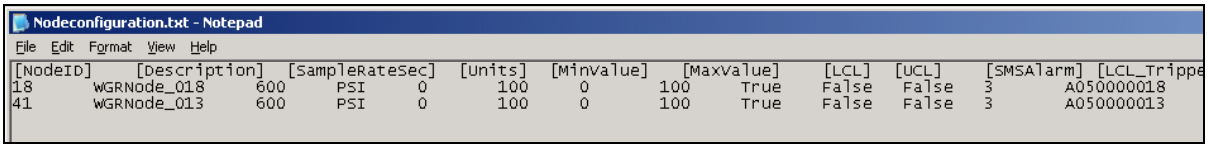

Nodeconfiguration.txt - Notepad
File Edit Format View Help
[NodeID] [Description] [SampleRateSec] [Units] [MinValue] [MaxValue] [LCL] [UCL] [SMSAlarm] [LCL_Tripp
18 WGRNode_018 600 PSI 0 100 0 100 True False False 3 A050000018
41 WGRNode_013 600 PSI 0 100 0 100 True False False 3 A050000013

Figure 10 : Example Nodeconfiguration.txt (tab-separated) file

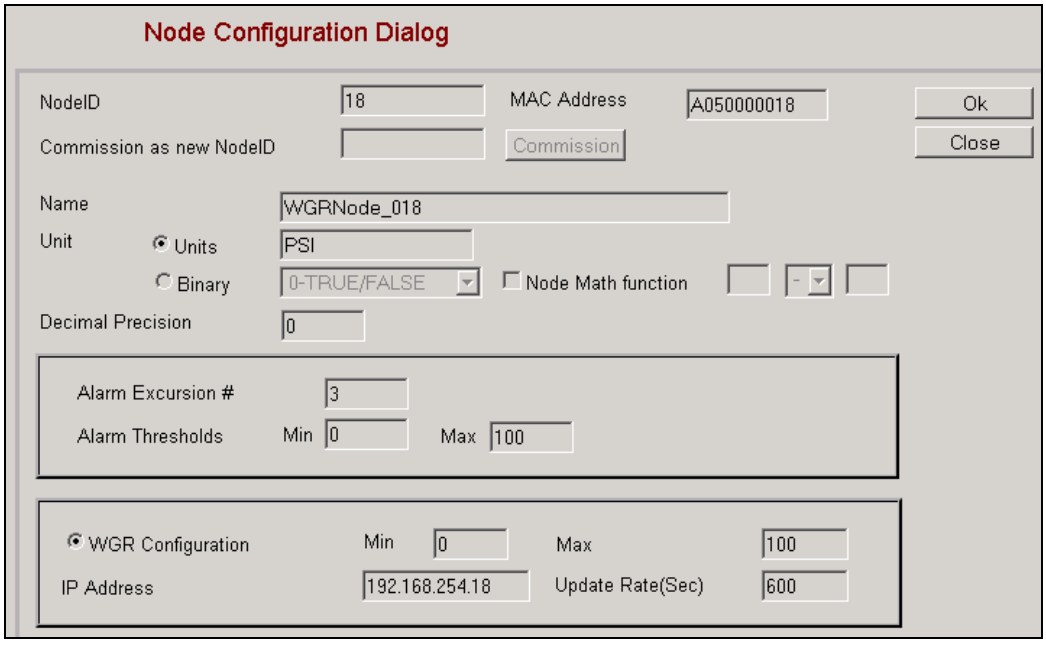


Figure 11 : Node Configuration pop-up dialog box

Edit a Node

To edit a node, go to the table in the lower half of the **CONFIGURATION** page. Click on the Edit link next to the node. This will launch a Node Configuration pop-up dialog box as shown in Figure 11.

Table 2 describes the node configuration parameters. After editing the parameters, the **Ok** button must be clicked to save the newly edited fields. To cancel the edits, simply click on the **Close** button to close the dialog box without saving.

Table 2 : Node Configuration Details

NodeID	The NodeID of the Device, which is a short and convenient ID used to reference the node when creating graphs and tables.
MAC Address	Specifies the unique MAC Address of the node. This value must contain a valid MAC address for the system to function properly when the node is commissioned.
Commission as new NodeID	Used to assign a permanent NodeID to an uncommissioned node. The new NodeID needs to be set between 1-1000.
Commission Button	Click to commission a new Node.
Name	Basic text description of the node
Unit	Unit of measurement for the monitored gauge. Enter any short descriptive string, such as PSI, Deg C, kPa, etc. A binary type may also be specified for special situations (TRUE/FALSE, ON/OFF, or ACTIVE/INACTIVE).
Node Math function	Allows simple computations to be made on two physical node readings, by referencing their two NodeIDs. The resulting value is displayed as a virtual node, by creating a new NodeID for displaying the result of the math function.

Decimal Precision	Decimal Precision specifies the number of decimal places to display on the readings page for the node's data. If no precision is specified, the number of decimal places will automatically be determined by the system for the node.
Alarm Excursion #	This is the number of consecutive times the node data limit must be exceeded before an Alarm condition is triggered.
Alarm Threshold Min	The lower control limit value. If the node reading drops below this number, an alarm condition is created.
Alarm Threshold Max	The upper control limit value. If the node reading rises above this number, an alarm condition is created.
WGR Configuration Min	This value is the minimum reading value on the gauge face. This value must be accurate for each gauge in order for the system to display the proper reading.
WGR Configuration Max	This value is the maximum reading value on the gauge face. This value must be accurate for each gauge in order for the system to display the proper reading.
IP Address	IP Address of the WGR device. This will automatically be updated by the WGRAG when it receives data packets from the node.
OK Button	Apply the changed settings to the node.
Close Button	Closes the dialog box

To see the change log of the nodes that have been added/deleted/edited, click on the icon in the upper right portion of the web page.

Checking the Node Status

The OneWireless Gauge Reader periodically transmits its health status to the WGR Application Gateway. The health status can be viewed by loading the **STATUS** page. This read-only screen (Figure 12) displays the status conditions of configured nodes on the Application Gateway. The status descriptions are shown in Table 3.

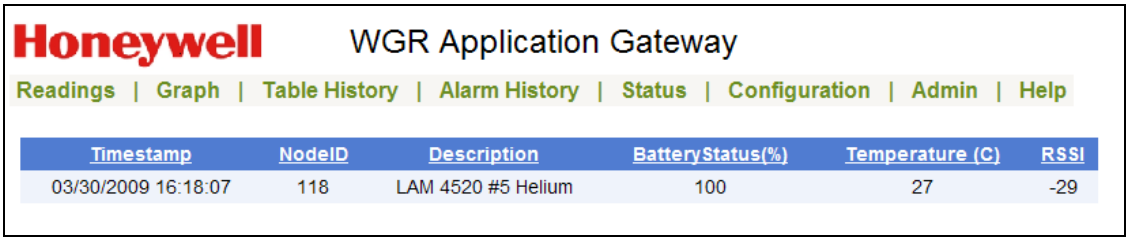


Figure 12 : Health information is displayed in the Node Status page

Table 3 : Node Status Descriptions

Parameter	Description
Battery Status	The battery level as a percentage of full-charge.
Temperature	The internal temperature (Celsius) of the WGR
RSSI	The Received Signal Strength Indicator (RSSI). This is an indicator of wireless signal strength based on messages received by the WGR from its associated Multinode.

Using Alarms

The Honeywell Web Application provides alerts for potential problems as they arise in the monitored nodes. The system triggers an alarm when a node reading exceeds an upper control limit or drops below a lower control limit. When an alarm is triggered, the **Alarm Status** button on the **READINGS** page turns red (Figure 13). Each alarm event is stored in the **ALARM HISTORY** log, and a summary of nodes that have triggered an alarm condition are shown on the **ALARM STATUS** page.

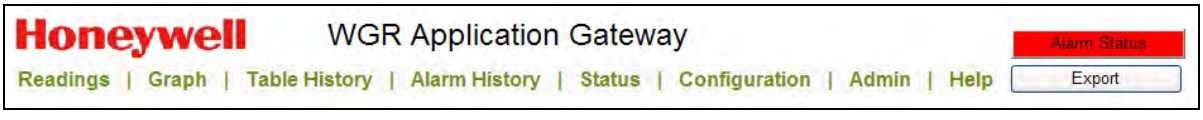

Honeywell
WGR Application Gateway
Alarm Status
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Export

Figure 13 : Alarm Status button on the Readings page

View Alarm Status

To view the current status of triggered alarms, click on the **Alarm Status** button on the **READINGS** page to bring up the **ALARM STATUS** page. (See Figure 14.) The **ALARM STATUS** page displays which nodes had triggered an alarm, and what was the reason for the alarm (above UCL, below LCL, or low battery). Nodes can be cleared from the **ALARM STATUS** page by resetting the alarm condition for each node or for all nodes. This is done by clicking the **Alarm Reset** button, to load the **ALARM RESET** web page.

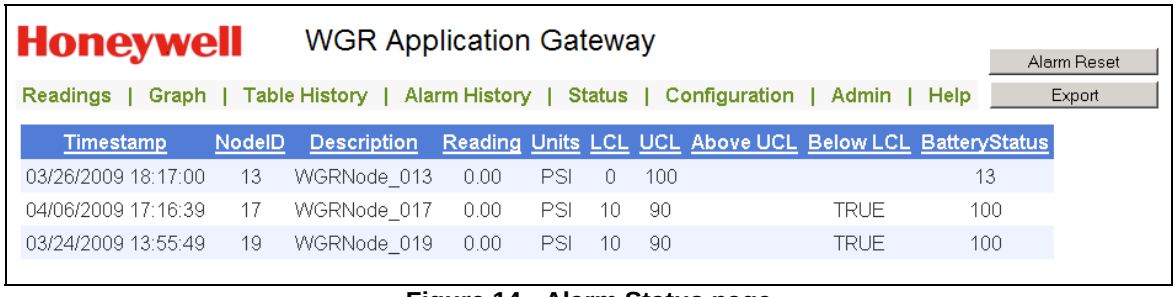

Honeywell
WGR Application Gateway
Alarm Reset
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Export
Timestamp NodeID Description Reading Units LCL UCL Above UCL Below LCL BatteryStatus
03/26/2009 18:17:00 13 WGRNode_013 0.00 PSI 0 100 13
04/06/2009 17:16:39 17 WGRNode_017 0.00 PSI 10 90 TRUE 100
03/24/2009 13:55:49 19 WGRNode_019 0.00 PSI 10 90 TRUE 100

Figure 14 : Alarm Status page

Reset Alarms

Once an alarm is triggered, it must be reset in order to receive new alarm indications. This is designed to avoid continuous alarm indications every time a new reading is received.

From either the **ALARM HISTORY** page, or the alarm status page, click on the **Alarm Reset** button. This will take you to the **ALARM RESET** page (Figure 15).

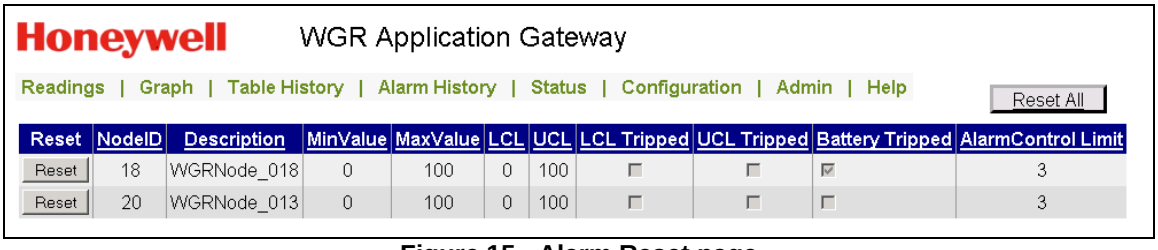

Honeywell
WGR Application Gateway
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Reset All
Reset NodeID Description MinValue MaxValue LCL UCL LCL Tripped UCL Tripped Battery Tripped AlarmControl Limit
Reset 18 WGRNode_018 0 100 0 100 3
Reset 20 WGRNode_013 0 100 0 100 3

Figure 15 : Alarm Reset page

To reset all alarms:

1) Click the **Reset All** button.
   a) This will reset the alert status for all nodes.

To reset alarms for individual nodes:

1) Click the Reset button in the row corresponding to the desired node
   a) This will reset the alert status for only this node.

View Alarm History

To view a history of all past alarms in the system, click on the **Alarm History** item in the menu bar to bring up the **ALARM HISTORY** page (See Figure 16).

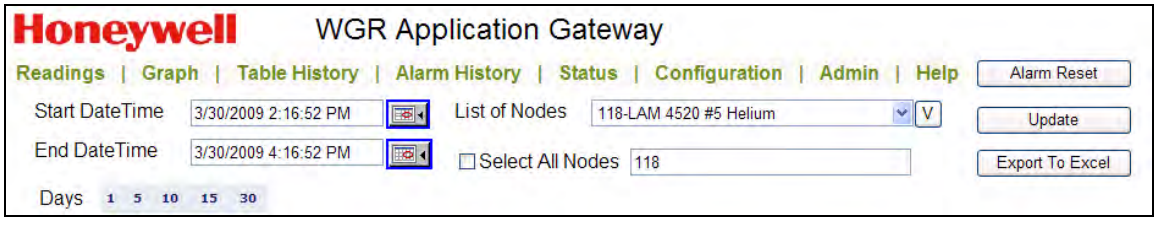

Honeywell
WGR Application Gateway
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Alarm Reset
Start DateTime 3/30/2009 2:16:52 PM
List of Nodes 118-LAM 4520 #5 Helium
Update
End DateTime 3/30/2009 4:16:52 PM
Select All Nodes 118
Export To Excel
Days 1 5 10 15 30

Figure 16 : Alarm History page

To specify an alarm history to display:

1) Specify the time period.
   a) In the dialog box, enter a value for Start Date & Time and End Date & Time.
   b) The format is m/dd/yyyy hh:mm:ss AM/PM
2) Select nodes to view.
   a) There are several ways to specify the desired nodes to display.
      i) You may type in a comma separated list of NodeIDs (“1,2,3”) into the NodeID field
      ii) Type in a range of NodeIDs (“1-3”) into the NodeID field
      iii) Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy them to the NodeID field
      iv) Check the box next to Select All Nodes, which will populate the NodeID field with all commissioned nodes in the system.
3) Click the **Update** button to display the results.
   a) The alarm history displays at the bottom of the screen. (See Figure 17)
4) To optionally export the data, click the **Export to Excel** button.
   a) The system creates a data file and downloads it in an Excel format.

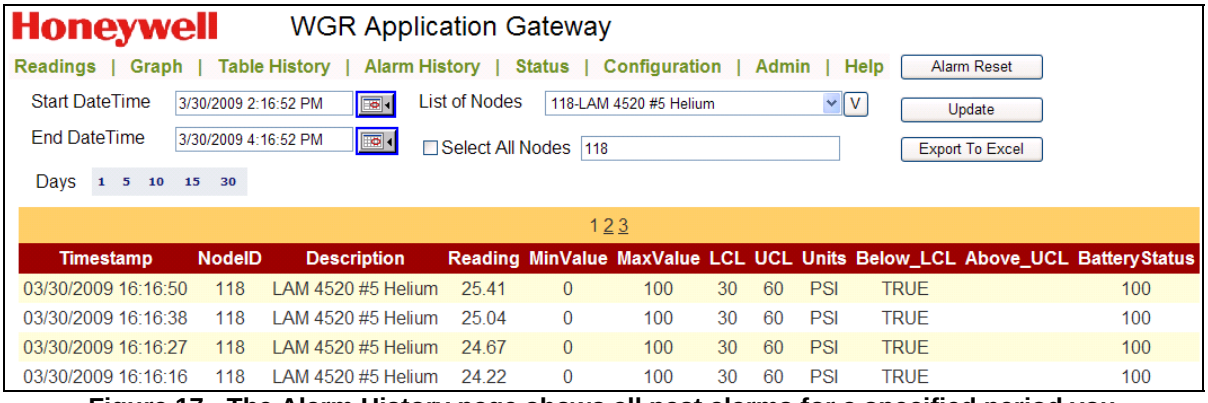

Honeywell
WGR Application Gateway
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Alarm Reset
Start DateTime
3/30/2009 2:16:52 PM
List of Nodes
118-LAM 4520 #5 Helium
Update
End DateTime
3/30/2009 4:16:52 PM
Select All Nodes
118
Export To Excel
Days
1 5 10 15 30
1 2 3
Timestamp NodeID Description Reading MinValue MaxValue LCL UCL Units Below_LCL Above_UCL BatteryStatus
03/30/2009 16:16:50 118 LAM 4520 #5 Helium 25.41 0 100 30 60 PSI TRUE 100
03/30/2009 16:16:38 118 LAM 4520 #5 Helium 25.04 0 100 30 60 PSI TRUE 100
03/30/2009 16:16:27 118 LAM 4520 #5 Helium 24.67 0 100 30 60 PSI TRUE 100
03/30/2009 16:16:16 118 LAM 4520 #5 Helium 24.22 0 100 30 60 PSI TRUE 100

Figure 17 : The Alarm History page shows all past alarms for a specified period you

Working with Graphs

The Honeywell Web Application provides basic graphing capability for the stored node readings data.

Create a Graph

To generate a graph from one or more node readings:

1) Click on Graph in the Main Menu bar to load the **GRAPH** web page.
   a) The **GRAPH** page appears.
   b) It includes two sections: a dialog box at the top (see Figure 18) and a graph portion at the bottom.

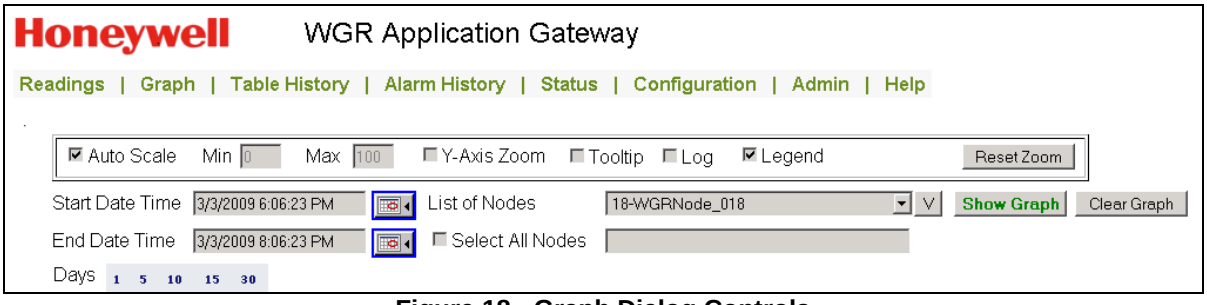


Figure 18 : Graph Dialog Controls

1) In the graph dialog box, enter values for Start Date & Time and End Date & Time.
   a) The format includes both date and time as m/dd/yyyy hh:mm:ss AM or PM.
   b) You may also click on one of the numbered buttons next to “Days” in order to quickly specify a common time range from 1-30 days prior to the End Data & Time.
2) Specify the NodeIDs to graph in the NodeID text field.
   a) There are several ways to specify the desired nodes to display.
      i) You may type in a comma separated list of NodeIDs (“1,2,3”) into the NodeID field
      ii) Type in a range of NodeIDs (“1-3”) into the NodeID field
      iii) Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy them to the NodeID field
      iv) Check the box next to Select All Nodes, which will populate the NodeID field with all commissioned nodes in the system.
3) Select from the additional options shown in Table 4.

Table 4 : Additional graphing options

Auto Scale	The graph will automatically scale the vertical axis based on the data values. By default, this option is selected. To turn off auto scale, uncheck the checkbox, and then the “Min” and “Max” fields will be enabled for manual entry.
Min	If Auto Scale is turned off, specify the min Y value on the graph.
Max	If Auto Scale is turned off, specify the max Y value on the graph.
Y-Axis Zoom	Allows the mouse cursor to zoom both X and Y axis, instead of only the X axis. By default zooming occurs only on the X axis
Tooltip	This enables the display of each actual reading value on the graph by hovering the mouse pointer over a point on the graph. By default this option is turned off to speed up graphing time, particularly for large data sets.
Log	When enabled, changes the Y-axis to a logarithmic scale instead of a default linear scale.
Legend	Allows the graphing legend to be disabled in order to make more room for the graph on the web page.
Reset Zoom	Resets the graph back to the default view (no zoom)

4) Click Show Graph to display the graph.

   a) An X-Y graph appears at the bottom of the page for the requested data range. (See Figure 19.)

Tip: If you click Clear Graph, all data in the dialog box clears, except for the NodeID list. If you want to remove a single node from the graph, you must look up the NodeID and then go into the list and delete it manually.

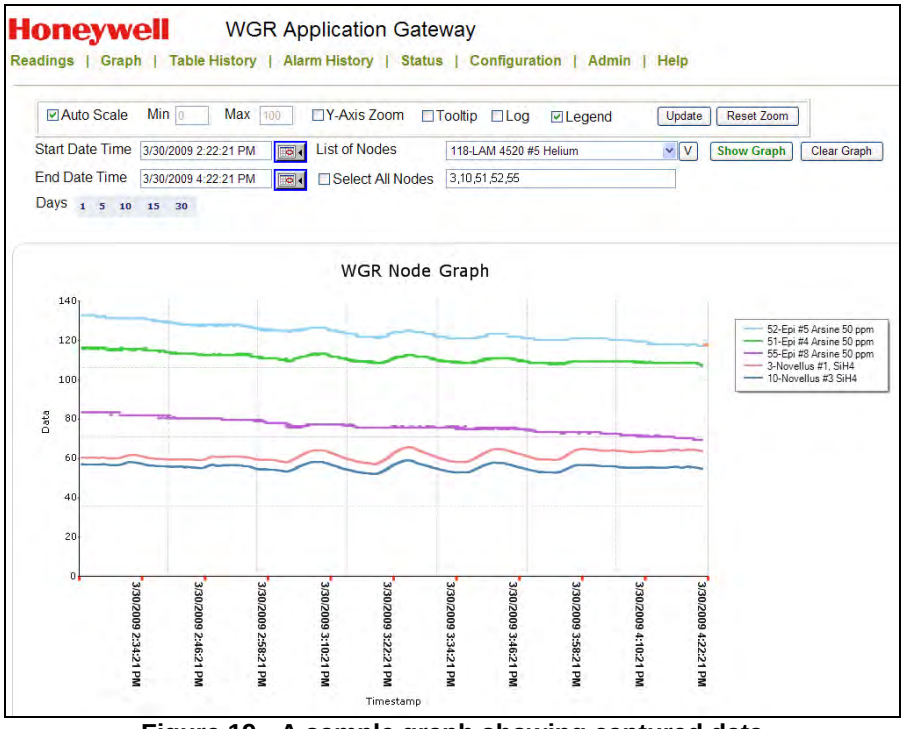


Figure 19 : A sample graph showing captured data

Graph Legend
When graphing multiple nodes, the graph legend will have the nodes listed in order from the highest reading value to lowest readings value based on the last displayed value of each series. This allows easier identification of each data series when graphing many nodes.

To improve graphing performance, very large sets of data will have some data compression. To ensure all desired points are graphed, adjust the Start Date and End Date to manually zoom into any area of interest for maximum detail.

Identify a Point
Tooltips can be used to conveniently determine the exact timestamp and data value for any point on the graph.

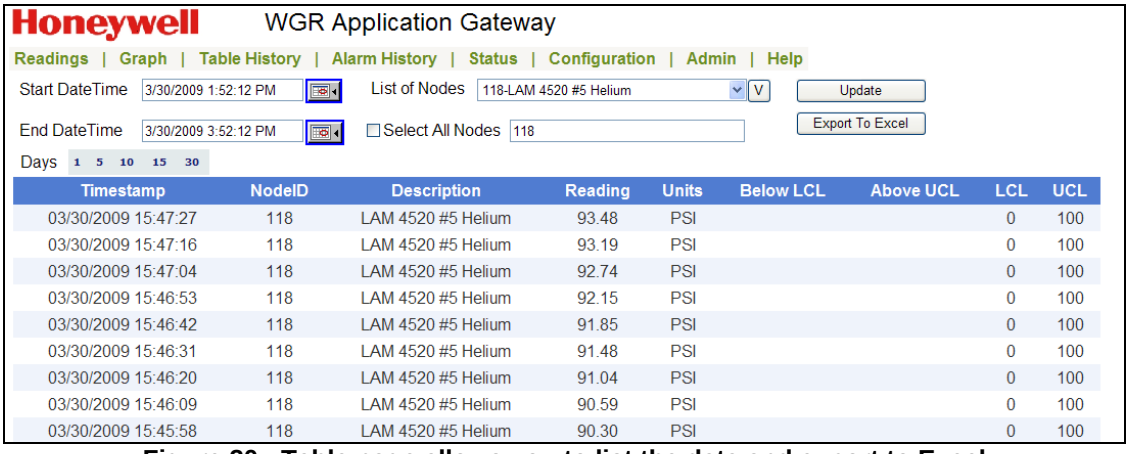
1) Enable Tooltips at the top of the page, which will cause the page to re-load with all of the additional required information.
2) Hover the mouse cursor over a point on the graph, and a small pop-up box will appear showing the corresponding NodeID, timestamp, and reading value.

Zoom
To zoom-in to a region of the graph, point the mouse cursor to the starting location on the graph, and then hold down the left button and drag to the right to define the zoom region, then release the button. You will be able to scroll the graph left and right to see the entire data set from the originally specified date range.

By default, zooming occurs in the X axis only. To zoom in on both the X and Y axis, first enable the "Y-Axis Zoom" option. When dragging the mouse cursor to define the zoom region, start with the upper left corner, and drag to the lower right corner of the desired zoom area.

Using Historical Data Tables

The Honeywell Web Application provides the ability to display historical data in table format. The historical data may also be exported and downloaded in Excel format.


Honeywell
WGR Application Gateway
Readings | Graph | Table History | Alarm History | Status | Configuration | Admin | Help
Start DateTime 3/30/2009 1:52:12 PM
List of Nodes 118-LAM 4520 #5 Helium
Update
End DateTime 3/30/2009 3:52:12 PM
Select All Nodes 118
Export To Excel
Days 1 5 10 15 30

Timestamp	NodeID	Description	Reading	Units	Below LCL	Above UCL	LCL	UCL
03/30/2009 15:47:27	118	LAM 4520 #5 Helium	93.48	PSI			0	100
03/30/2009 15:47:16	118	LAM 4520 #5 Helium	93.19	PSI			0	100
03/30/2009 15:47:04	118	LAM 4520 #5 Helium	92.74	PSI			0	100
03/30/2009 15:46:53	118	LAM 4520 #5 Helium	92.15	PSI			0	100
03/30/2009 15:46:42	118	LAM 4520 #5 Helium	91.85	PSI			0	100
03/30/2009 15:46:31	118	LAM 4520 #5 Helium	91.48	PSI			0	100
03/30/2009 15:46:20	118	LAM 4520 #5 Helium	91.04	PSI			0	100
03/30/2009 15:46:09	118	LAM 4520 #5 Helium	90.59	PSI			0	100
03/30/2009 15:45:58	118	LAM 4520 #5 Helium	90.30	PSI			0	100

Figure 20 : Table page allows you to list the data and export to Excel

Create a Table

To generate a table from several node readings:

1) Click on Table History in the Main Menu bar to load the **TABLE HISTORY** web page.
   a) It is very similar to the **GRAPH** page, with a dialog box on the top and data displayed at the bottom.
2) In the dialog box, enter values for Start Date & Time and End Date & Time.
   a) The format includes both date and time as m/dd/yyyy hh:mm:ss AM or PM.
   b) You may also click on one of the numbered buttons next to “Days” in order to quickly specify a common time range from 1-30 days prior to the End Data & Time.
3) Specify the NodeIDs to display in the NodeID text field.
   a) There are several ways to specify the desired nodes to display.
      i) You may type in a comma separated list of NodeIDs (“1,2,3”) into the NodeID field
      ii) Type in a range of NodeIDs (“1-3”) into the NodeID field
      iii) Use the pull-down menu in the List Of Nodes field, and click the down-arrow button to copy them to the NodeID field
      iv) Check the box next to Select All Nodes, which will populate the NodeID field with all commissioned nodes in the system.
4) A table appears at the bottom on the screen displaying the following historical data parameters
   a) Timestamp: Timestamp of data reading
   b) Node ID: The unique ID number of the WGR node
   c) Description: The name of the node
   d) Reading: The value read by the WGR

e) Units: The units of the gauge (e.g. PSI)

f) Above UCL: Indicates if an over-limit alarm occurred

g) Below LCL: Indicates if a below-limit alarm occurred

h) LCL: The lower control limit (LCL) value

i) UCL: The upper control limit (UCL) value

5) To optionally export the data table, click the **Export to Excel** button.

a) The system creates an Excel file and downloads it onto your computer.

5) Data History

The OneWireless Gauge Reader Application Gateway stores data from gauge readers for a period of 12 months. After 12 months, data is cleaned from the application gateway's database on a first in, first out priority. Historical data is periodically stored in the WGRAG in the “c:\wgrlog” folder every week. Users can manually restore this archived historical data to a MSSQL database, if desired. Alternatively, data can be preserved by exporting to an Excel file from the Web application.

When OPC Server is used and the gauge reader data is regularly accessed by other client systems such as Experion or Field Device Manager, data retention is determined by the policies set for these individual client applications.

6) OPC Interface

To interface to existing plant infrastructure, the WGR Application Gateway contains an OPC Data Access server. Please consult with your Honeywell support representative for interfacing to the WGRAG using OPC.

The name of the OPC server on the WGRAG is " WGR.OPC.1"

The following OPC tags are available:

- **WGRNodeID**: The configured WGR NodeID
- **WGRReading**: WGR device reading
- **WGRUnit**: WGR reading unit type (E.g. PSI, C, F)
- **WGRBatteryStatus**: WGR battery status reading (%)
- **WGRTemperature**: WGR internal temperature reading (C)
- **WGRRSSI**: Received Signal Strength Indicator
- **WGRTimestamp**: Timestamp when the data arrived
- **WGRIPAddress**: WGR IP address
- **WGRMACAddress**: WGR device MAC address
- **WGRFriendlyName**: WGR device friendly name

7) Troubleshooting

The most common problems with the WGR Application Gateway are listed below:

The web page displays an error message.

This happens sometimes when the cached version of the web page on a local PC is not compatible with the latest version on the Application Gateway. Try pressing CTL+F5 several times, which should force the web browser on your local PC to refresh the web page from the Application Gateway.

I'm not able to create a graph. When I click, "Show Graph," nothing happens.

Generally, this means no data was available. Check your start and end time to make sure that it includes data.

The graph takes a long time to load

This typically means that a large amount of data was specified. Try reducing the date range, or number of nodes, or disable Tooltips in order to reduce the amount of data to load and render.

The readings on the gateway do not match the readings on the device.

The readings are based on a percentage of full scale determined from the "MinValue" and "MaxValue" parameters entered in the **CONFIGURATION** page. If the "MinValue" and "MaxValue" are not configured correctly on both the WGR and WGR Application Gateway, then the "Reading" value may be incorrect.

If you have additional problems, please contact us. See the *Support* section below for contact information.

8) Technical Specifications

User Interface:	Built in Web Server for easy browser access to data and trending
Available Data Protocols:	OPC Data Access Server
Approvals:	CE and RoHS Compliant
Power Supply	90-240 VAC
Operating Temperature:	0°C to 45°C
Storage Temperature:	-20°C to +80°C
Humidity:	10-90%, non-condensing
Enclosure:	Ruggedized aluminum industrial chassis
Dimensions:	12.0 in x 8.3 in x 4.1 in (300 mm x 210 mm x 104.5 mm)
Weight:	14 lbs (6.3 kg)

9) Warranty Information

Every product comes with a full one-year parts and labor warranty.

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10) Support Services / Contact Information

For application assistance, current specifications, pricing, or name of the nearest Authorized Distributor, contact one of the offices below.

ASIA PACIFIC

Control Products
Asia Pacific Headquarters
Phone: +(65) 6355-2828
Fax: +(65) 6445-3033

Asia Pacific Global Technical Support

Field Instruments
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